

1 **COLLAPSIBLE BARBECUE GRILL ASSEMBLY**



2 **BACKGROUND OF THE INVENTION**

3 1. Field of the Invention

4 The present invention relates to a barbecue grill assembly, and more
5 particularly to a collapsible barbecue grill assembly that can be assembled or
6 dissembled quickly and easily.

7 2. Description of Related Art

8 Commonly, conventional barbecue grills are not assembled when
9 purchased. This makes commercial sense in that each barbecue grill requires
10 less space during transportation to and stocking at the retailers, meaning
11 more units may be transported in each shipment, thereby saving money for
12 both the manufacturer and the retailer of the barbecue grill. In addition, this
13 provides for easier transportation of the barbecue grill from the store by the
14 purchaser or when the purchaser takes the barbecue grill out for camping.
15 However, this also results in a number of potential problems. The purchaser
16 has to either partially or fully assemble the barbecue grill prior to use. This
17 can require added expense and possibly significant time on the part of the
18 purchaser. For example, should the purchaser not already possess the tools
19 required to assemble the barbecue grill, the purchaser will have to either
20 borrow or purchase the tools. Additionally, the assembly of the barbecue grill
21 may quite frequently be beyond the mechanical acumen of the purchaser,
22 thereby, causing frustration and reduced consumer satisfaction in the overall
23 product.

24 Furthermore, assembly by the purchaser increases both the chances

1 of parts being lost during assembly and the barbecue grill being improperly
2 assembled. Lost parts can lead to time and effort on the part of both the
3 purchaser and manufacturer. First, the purchaser must secure another part
4 before the barbecue grill assembly can be completed and the barbecue grill
5 used. Hopefully, the missing part is in the retailer's stock system so that the
6 part may be rapidly replaced. However, in all likelihood, the part will have to
7 be procured from the manufacturer, leading to lengthy delays in the use of
8 the barbecue grill. Second, because the barbecue grill is brand new, the
9 purchaser will likely believe the missing part was not originally provided.
10 Therefore, the manufacturer will have to replace the part free of charge.

11 The present invention has arisen to mitigate or obviate the
12 disadvantages of the conventional barbecue grill assembly.

13 **SUMMARY OF THE INVENTION**

14 The first objective of the present invention is to provide a collapsible
15 barbecue grill assembly, which is easily assembled or disassembled.

16 The second objective of the present invention is to provide a
17 collapsible barbecue grill, which uses no trivial accessory and so avoids
18 otherwise failure of complete erection of the barbecue grill due to the
19 missing accessory.

20 Further benefits and advantages of the present invention will become
21 apparent after a careful reading of the detailed description with appropriate
22 reference to the accompanying drawings.

23 **BRIEF DESCRIPTION OF THE DRAWINGS**

24 Fig. 1 is an exploded perspective view of a collapsible barbecue grill

1 assembly in accordance with the present invention;

2 Fig. 2 is an exploded perspective view of part elements used on the
3 collapsible barbecue grill assembly;

4 Fig. 3 is a perspective view of a charcoal container in the collapsible
5 barbecue grill assembly;

6 Fig. 4 is a perspective view of a top rack in the collapsible barbecue
7 grill assembly;

8 Fig. 5 is a partially cross-sectional top plane view of a pivotal end of
9 the top rack;

10 Fig. 6 is a perspective view of the collapsible barbecue grill
11 assembly in combination; and

12 Fig. 7 is a perspective view of the collapsible barbecue grill
13 assembly showing another embodiment.

14 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

15 With reference to Figs 1 and 2, a collapsible barbecue in accordance
16 with the present invention comprises a leg assembly (10), a foldable top rack
17 (20), a foldable charcoal container (30), and optional a grill (40).

18 The leg assembly (10) is composed of four legs (not numbered) to
19 connect with the top rack (20) and to support the top rack (20) above the
20 ground. With further reference to Fig. 2, each leg has a grounding tube (12)
21 with a connecting end (not numbered) and an abutting end (not numbered)
22 and a middle tube (14) with an engaging end (not numbered) and an inserting
23 end (not numbered). An enlarged rubber foot (122) is attached on the
24 abutting end of the grounding tube (12) to provide a friction force to keep the

1 top rack (20) steady. A narrow frustum (124) is formed on the connecting
2 end of the grounding tube (12) and has a stub (126) formed on an outer
3 periphery of the frustum (124).

4 The engaging end of the middle tube (14) has an inner diameter
5 slightly smaller than an outer diameter of the frustum (124) to tightly receive
6 the frustum (124) of the grounding tube (12). The engaging end further has a
7 dent (not shown) formed on an inner periphery of the engaging end to mate
8 with the stub (126) to keep the grounding tube (12) in position on the middle
9 tube (14). The inserting end of the middle tube (14) is also a narrow frustum
10 (144) with a stub (146).

11 The top rack (20) has two side frames (22a) (22b) and two panels
12 (24a) (24b) pivotally connected between the two side frames (22a) (22b).
13 With further reference to Figs 4 and 5, each side frame (22a) (22b) is an
14 inverted U-shaped tube composed of a top (not numbered) and two arms (not
15 numbered) and has an optionally horizontal member (26a) (26b) extending
16 between the two arms. Each arm of the side frame (22a) (22b) has a distal
17 end having an inner diameter slightly smaller than an outer diameter of the
18 frustum (144) of the middle tube (14). The distal end of the arm on the side
19 frame (22a) (22b) further has a dent (not shown) formed in an inner
20 periphery to mate with the stub (146) on the frustum (144). Whereby, the
21 middle tube (14) is detachably yet firmly attached on the top rack (20) by
22 inserting the frustum (144) into the distal end of the arm. The panels (24a)
23 (24b) are parallel connected between the two side frames (22a) (22b) at the
24 arms, wherein each panel (24a), (24b) is a long strip with two ends and a

1 curved collar (242) is formed on one end of the panel (24a) to hoop one
2 corresponding arm. As shown in Fig. 4, only one curved collar (242) is
3 formed on one corresponding end of the panel (24a), which surrounds more
4 than half of the circumference of the arm to pivotally mount the panel (24a)
5 on the arm. Other ends of the panel (24a) (24b) are respectively and
6 undetachably sleeved on the corresponding arms to achieve the top rack (20).
7 However, when the curved collar (242) is detached from the arm, the whole
8 top rack (20) can be folded to reduce in size the top rack (20) by pivoting the
9 panels (24a) (24b) around the side frames (22a) (22b). Moreover, the folded
10 top rack (20) is still in one piece without taking elements apart so that the
11 elements of the top rack (20) will not be lost after the barbecue grill
12 assembly is disassembled. Additionally, reassembling the top rack (20) is
13 also quick and easy by pivotally extending out the top rack (20).

14 With further reference to Fig. 3, the charcoal container (30) mounted
15 on the top rack (20) is foldable and has two symmetrical bodies (32) to
16 construct an enclosing wall with a top opening and a bottom opening, and a
17 bottom plate (36) detachably attached on the enclosing wall to cover the
18 bottom opening. Two holding strips (34) are parallel with each other and
19 mounted between the two tops of the side frame (22a) (22b) at outer portions
20 near the arms. As shown in Fig. 2, each holding strip (34) has two ends and
21 two curved ears (342) respectively formed on the two ends to correspond to
22 partial periphery of the top of the side frame (22a) (22b). Each symmetrical
23 body (32) of the charcoal container (30) has a long side board (322) with two
24 short sides and two long sides, two short wings (324) pivotally and

1 respectively attached on the short sides of the long side board (322), and a
2 top flange (326) extending outwardly at one long side near the top opening.
3 Each wing (324) on one symmetrical body (32) has a distal end (not
4 numbered) to pivotally connect with one corresponding distal end of the
5 wing (324) on another symmetrical body (32) to construct the enclosing wall.
6 Thereby, the enclosing wall is foldable by pivotally bending two adjacent
7 wings (324) at pivot joints inward to make the charcoal container (30) flat.
8 Optionally, multiple ventilating holes (not numbered) are defined in the long
9 side board (322) or the wings (324) to make charcoal burn easily. Lastly, the
10 bottom plate (36) is attached to the enclosing wall at the bottom opening by
11 means of wedges. Preferredly, the enclosing wall is slightly tapered near the
12 bottom opening to limit the bottom plate (36) to fall out of the via the bottom
13 opening and has multiple slits (328) defined on the long side board (322).
14 The bottom plate (36) further has multiple pins (362) formed at edges of the
15 bottom plate (36) to respectively insert into corresponding slits (324) to
16 combine the bottom plate (36) and the enclosing wall together.

17 With further reference to Fig. 6, after the holding strips (34) are
18 mounted on the top rack (20), the charcoal container (30) is enabled to be
19 mounted on the top rack (20) by resting the top flange (326) on the holding
20 strips (34). Lastly, the grill (40) is placed on the top rack (20) over the
21 charcoal container (30) for performing the barbecue. In Fig. 7, the grill (40)
22 is selectively substituted by a metal plate (50).

23 According to the above description, the collapsible barbecue grill
24 assembly is easily combined by wedging the multiple legs (12) into arms of

1 the top rack (20), extending out the top rack (20) and the charcoal container
2 (30), and resting the holding strips (34), the charcoal container (30), and the
3 grill (40) sequentially on the top rack (30). Additionally, the engaging means
4 of the collapsible barbecue grill assembly in the present invention uses no
5 trivial accessory such as screws, nuts, rods, so that combination of the
6 barbecue grill is rapid and convenient without requiring any tool. Moreover,
7 there is no chance of failure to erect the collapsible assembly as there are no
8 trivial components to be lost.

9 Although the invention has been explained in relation to multiple
10 preferred embodiments, many other possible modifications and variations
11 can be made without departing from the spirit and scope of the invention as
12 hereinafter claimed.